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How Stress and Emotional Burnout Affect the Effectiveness of Neuropedagogical Supervision Methods for Psychologists

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Abstract: *The article focuses on identifying the neuropedagogical determinants of professional burnout among psychologists working under chronic stress during Russia's war against Ukraine. It applies several methods, including thematic selection, literature review, systemic analysis of secondary sources, and neuropedagogical modelling. Besides, the article validates the ongoing implementation of their original project. These approaches have made it possible to reach the main aim: to identify and substantiate the neuropedagogical determinants and predictors of professional burnout in psychologists exposed to chronic stress and to design a pilot algorithm for remote supervision. The article examines the factors that shape emotional resilience, cognitive self-regulation, and professional effectiveness of psychologists working remotely in such extreme conditions. The obtained results reveal certain neurological disorders due to long-term stress. These neurological changes negatively influenced the quality of psychologists' work. One can mitigate these challenges through a neuropedagogical algorithm of remote supervision. The model integrates diverse practices, ranging from mindfulness techniques to digital platforms and informal spaces of mutual support. Even though the project is still at the implementation stage, the first results are promising. They show a gradual reduction of stress and its deontological consequences, alongside an improvement in coping strategies and reflective skills.*

Keywords: *professional burnout; chronic stress; emotional self-regulation; resilience; remote supervision; mindfulness approaches; war in Ukraine.*

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Introduction

Supervision has long been recognized as a key tool for professional support, skill development, and retraining in psychological practice. McMahon & Errity (2014) believe that supervision cultivates professional growth as it promotes thought-provoking discussions and communication skills. Besides, it improves analytical thinking and enables psychologists to provide valuable feedback.

However, professionals often face negative factors such as professional deformation and the effects of excessive or atypical workloads. These challenges are particularly evident in medical deontology and psychological practice. In recent years, researchers have shifted toward more focused and specialized studies on psychological burnout. Many of these studies use meta-synthesis to analyze existing findings.

A notable example is research conducted by experts from the Norwich Medical School at the University of East Anglia (Vivolo et al., 2024). Their findings reveal that burnout among psychologists and therapists has a significant impact on both personal well-being and clinical effectiveness. This highlights the need for a comprehensive examination of the factors that contribute to professional burnout.

Research relevance

The study of how stress and emotional burnout influence the effectiveness of psychological supervision has become increasingly relevant due to the growing challenges in the professional environment, which is a horizontal component of the global landscape. According to Koliadenko et al. (2022), this issue became particularly prominent during the COVID-19 pandemic and in the post-pandemic world, as remote counselling and supervision became more widespread. The researchers' experience as practitioners and educators in stressful conditions reveals that today's supervision must primarily focus on stimulating cognitive reflection and emotional self-regulation. These aspects are often significantly disrupted in exhausted professionals.

From the perspective of supervision principles and methodology, coping strategies and stress avoidance relate directly to the reliability of the knowledge and competencies that psychologists acquire and later apply in their practice. However, under long-term stress, such as the ongoing war in Ukraine, which has lasted for over three years, the elevated levels of cortisol alter cognitive processes in psychologists and counsellors. This includes their memory, analytical thinking, and empathic understanding of clients.

One anticipates, however, that neuropedagogical methods should reduce stress-inducing and other destructive factors, as well as improve the effectiveness of training and professional self-development.

These perspectives raise important epistemological questions about the nature of knowledge in professional training. They include spaced practice, emotional reinforcement, and metaphors to activate long-term memory. Together, they can improve the effectiveness of mastering complex psychotherapeutic techniques and self-regulation methods for psychologists.

An essential component of this article's relevance is the social-political context, which has drastically changed the work of psychologists (both civilian and military) in Ukraine and other conflict zones. The findings show that Ukrainian psychologists who work with victims of Russian aggression experience emotional burnout and stress. Similar evidence was reported in a separate study on medical workers (Barkovska, 2022). In addition, the psychological trauma of patients often triggers so-called "secondary stress" in specialists. The number of people in Ukraine seeking psychological or psychiatric support has also been rising sharply each year (Chornokondratenko& Malenko, 2025).

It is, therefore, important to initiate supervision programmes to mitigate the negative consequences of stress and burnout among psychologists in Ukraine.

Accordingly, this article aims to justify the neuropedagogical drivers and predictors of professional burnout in psychologists working under chronic stress conditions (such as the ongoing war in Ukraine). Additionally, the article seeks to model a pilot algorithm for remote supervision to help address and mitigate these destructive factors.

The practical results of this article aim to guide personal coping strategies, especially in the context of military conflicts. These conflicts create additional stress factors for psychologists who are helping victims. According to the World Health Organization (2024), about 30% of Ukraine's population may suffer from post-traumatic stress disorder due to the war. Psychologists working intensively to address emotional-affective, post-traumatic, and other disorders caused by the war may experience "double burnout" and stress. One form of burnout comes from being overworked professionals, while the other arises from living in a conflict environment. This increases the workload on psychologists and heightens the risk of emotional burnout.

International relevance of research

The Ukrainian experience of psychological support and remote supervision for psychologists can be useful for other countries. This is especially important today, as military conflicts are intensifying on several continents. According to current standards of military assistance, humanitarian missions are also regularly deployed to conflict zones.

Research ethics

All 45 psychologists voluntarily agreed to participate in the new algorithm for regular remote supervision and provided written consent.

The authors of this article believe that studying the neuropedagogical aspects of supervision opens up opportunities for developing new approaches. This includes using neurobiological feedback technologies, such as heart rate variability monitoring, or incorporating virtual reality to simulate complex therapeutic situations. Implementing these aspects can help optimize professional training and reduce the risk of cognitive overload and emotional burnout in psychologists.

Literature review

In the context of the globalized world, which is reshaping the geopolitical configuration, the growing psycho-emotional pressures are an inseparable part of the work of practical psychologists. In this regard, it is imperative to review neuroscientific research and empirical studies on the correlation between stress levels, emotional burnout, and the effectiveness of supervision processes.

A systematic review of supervisory practices as evidence-based and educational methods to improve psychologists' competencies (especially coping skills) reveals that supervision plays a crucial role in developing flexible new competencies for specialists. It also helps protect their psycho-emotional well-being, directly contributing to the prevention of professional burnout and stress. Many of these strategies and techniques are based on the "scientist-practitioner" model, which integrates scientifically grounded methods into clinical, counselling, and supervisory practices. This approach fosters the development of analytical thinking, reflective abilities, and adaptive skills. Empirical research shows that effective supervision includes structured methods for assessing competence, providing feedback, modelling situations, and active learning, which help strengthen professional confidence and psychological resilience (Barrett et al., 2020). However, there are no recent

studies where neuroscientific, particularly neuropedagogical, methods have been used to address extreme emotional burnout during remote supervision.

Remote supervision leads to more stable and consistent skill acquisition, as well as maintaining professional confidence, recovery, and relaxation. Research shows that remote supervision improves competence in motivational interviewing, reduces ineffective interventions, and increases empathy and reflective abilities. This ultimately lowers the risk of professional burnout and boosts job satisfaction (Smith et al., 2012).

The most pronounced consequences are a decline in professional capacities and emotional exhaustion. In contrast, empathic mechanisms have shown the greatest resilience to prolonged stress (Karamushka et al., 2024).

The reviews already conducted appear to be of value. McCormack et al. (2018) determined that applied psychologists are the most vulnerable to emotional exhaustion, with nearly 40% affected. The factors that moderate this risk include personal characteristics such as experience, age, gender, and emotional resilience (McCormack et al., 2018).

On the other hand, the COVID-19 pandemic and military conflicts in Ukraine and the Middle East have led to the mass migration of refugees, and psychologists who were accustomed to working in "standard conditions" are now addressing the challenges faced by refugees. Refugees from Ukraine, Palestine, and Syria require a highly differentiated approach due to their unique religious and value-based beliefs (Mahamid & Veronese, 2021).

The analysis shows that the psycho-emotional burden on psychologists is a global issue. This highlights the importance of remote supervision as a way to counteract destructive psycho-emotional factors.

Methods and research design

The methodology used is based on an interdisciplinary approach. It focuses on neuropsychological patterns, relevant factors, available resources, and applicable technologies. Overall, the methodology was implemented through the following sequential, discussion-based article design.

Thematic Literature Selection. A targeted search was conducted for scholarly sources on emotional burnout among psychologists, supervision methods, and their neuropedagogical foundations. For further analysis, the authors of this article selected relevant literature from the past ten years. The most valuable sources were existing reviews on the neuroscience of stress (Kalisch et al., 2024) and on neuroplasticity as a neuropsychological resource for countering negative effects and supporting self-regulation (Hölzel et al., 2011). They also included selected studies by Ukrainian researchers who work directly with combatants and conflict victims (Karamushka et al., 2024).

Literature Review and Systematic Analysis. The authors conducted a systematic analysis of publications in both English and Ukrainian, applying the principles of narrative meta-synthesis. They compared traditional supervision approaches with innovative neuropedagogical models, placing special emphasis on remote interaction platforms such as Zoom, Moodle, and Google Classroom.

Secondary Source Analysis Related to the Research Topic. It was also necessary to examine available secondary studies on mental and affective burnout among specialists in rehabilitation and military psychology. Such factors as the sense of professional self, collective belonging, and commitment to the entity were viewed as the potential causes of emotional burnout (Kalisch et al., 2024). These changes critically affect the functioning of psychologist-supervisors.

Neuropedagogical Modelling. Following the identified factors, the authors developed a pilot model of remote neuropedagogical supervision aimed at professionals experiencing occupational burnout. The model integrates mindfulness practices, body-orientated exercises, digital tools for reflective practice, and informal support spaces such as "support cafés" and "mirror groups". Its implementation follows five phases: 1) burnout diagnosis (Maslach Burnout Inventory – MBI; heart rate variability (HRV)), 2) session modelling, 3) resource restoration through neuroplasticity techniques, 4) interactive reflection, and 5) long-term integration. The project is supported by the educational programme of the Ukrainian Ministry of Education and Science (Ministerstvo osvity i nauky Ukrainy, 2023).

Current Project Implementation. At the time of writing, 45 psychologists from different regions of Ukraine, including active conflict zones, participate in the pilot remote supervision project. These psychologists also took part in the practical pilot supervision project. They gave written consent to participate in this quasi-experimental phase of the study.

Data analysis

A review of secondary data from other studies examining destructive neuropsychological factors in the environment, including organizational and psychological elements, has identified key predictors of burnout. Specifically, staff involvement in work, including supervisory modulation of professional energy, dedication, and engagement, helps lower professional exhaustion. The level of attachment to the organization and community was also found to be an important predictor of burnout. Pragmatic attachment is associated with lower emotional exhaustion and depersonalization, while emotional attachment negatively correlates with professional achievement reductions (Sakuliak, 2024).

These results and experiences highlight the need for comprehensive organizational strategies to enhance the effectiveness of supervision and create a resilient organizational identity for staff. These strategies are key to minimizing professional burnout in rehabilitation centers for injured soldiers and other forms of psychological assistance. A summary table of the proven empirical data is below (see Table 1).

Table 1. Findings on professional burnout among staff at rehabilitation centers for injured military personnel

Category	Main indicators	Level of intensity	Significant influencing factors
Components of professional burnout	Reduction of professional achievements	High (48%)	Emotional workload, lack of self-realization
	Emotional exhaustion	High (33%)	High work intensity, working with injured military personnel
	Depersonalization	Moderate (23.3%)	Low support, emotional exhaustion
Engagement in work	Good condition	Average (59%)	Psycho-emotional resilience, organizational support
	Commitment to work	Average (64.7%)	Sense of importance of activity, motivation
	Absorption in work	Average (65.5%)	Self-realization, professional identity
Commitment to organization	Emotional commitment	Low (11.6%)	Sense of belonging, value of the organization
	Pragmatic commitment	High (29.6%)	Material incentives, stability
	Commitment from duty	Moderate (21.8%)	Ethical obligations, professional values
Impact on burnout	Engagement in work	Negative (reduces burnout)	All components of engagement
	Commitment to organization	Selective	Pragmatic factors reduce exhaustion, while emotional ones undermine professional achievements.

Source: Based on the empirical research by Karamushka et al. (2024)

Table 1 reflects the key findings from previously conducted research and shows the level of burnout indicators and their relationship with organizational-psychological factors in the Ukrainian region.

The issue of professional burnout among military psychologists is particularly relevant to Ukrainian researchers, as it holds significant practical importance in eliminating the humanitarian consequences of war. For example, the Ukrainian researcher Pashchenko (2024) reflected on international experience from the perspective of Ukrainian scholars. She highlighted the neuropedagogical interdisciplinary discourse as the most valid approach for use under martial law. This approach can help modify regulatory mechanisms effectively.

In her research, a significant concept is "emotional labor", viewed as a critical factor in professional exhaustion. It is driven by the need for systematic emotional self-regulation and affective management in professional activities, particularly in fields that involve intensive interaction with people.

Weak professional identity is a predictor of increased burnout components when working in a "tense society" (Ntontis et al., 2023). This evidence reinforces the multifactorial nature of emotional burnout and emphasizes the need for further development of interdisciplinary models. These models should integrate approaches from cognitive, social, organizational, and neuropsychology to create effective preventive and corrective strategies. The authors of this article believe such models can be implemented through partial projects or remote supervision sessions between specialists.

When discussing neuropedagogical aspects of supervision for psychologists in military settings, it must be a systemic form of professional support. This support should aim to maintain emotional resilience, cognitive flexibility, and ethical reflection for specialists working with traumatized clients. Unlike supervision in peacetime, the military context requires a crisis and an adaptive approach. It calls for integrating emergency psychological assistance methods (Everly Jr. & Lating, 2022), methods for mitigating secondary traumatization (Figley, 1995), the combined use of remote, rotational, group, and other forms of supervision (Reddy et al., 2023), as well as non-traditional approaches, such as spiritual practices.

The effectiveness of such supervision depends on creating a safe space for psychologists working in a chronically stressful environment. It is possible due to the techniques that help prevent burnout and improve the effectiveness of psychological support (Wagner & Cáceres-Melillo, 2023).

In the context of the full-scale war in Ukraine, psychologists work in environments shaped by constant exposure to traumatized clients, high

emotional workloads, and the need to provide emergency psychological assistance to both military personnel and civilians. As a result, professional stress among psychologists becomes chronic. It leads to prolonged effects that disrupt neuroplasticity mechanisms and create an imbalance between the sympathetic and parasympathetic nervous systems. Thus, during wartime, supervision is crucial not only as a form of professional support but also as a means of psycho-emotional rehabilitation for the specialists themselves.

Results

Before presenting the authors' pilot project on remote supervision of psychologists, one should indicate that two years ago, the Ministry of Education and Science of Ukraine issued an order titled, "On Approving the Standard Programme for Professional Development of Practical Psychologists in Educational Institutions: Psychological and Pedagogical Methods and Tools for Working with Psychological Trauma Caused by Martial Law" (Ministerstvo osvity i nauky Ukrainy, 2023). This programme was designed to develop the competencies of educational psychologists to provide psychological support to those affected by the war.

The programme focuses on mastering advanced methods of diagnostics, counselling, and support, and on implementing a multi-level model of psychosocial support in educational settings. In this context, neuropedagogical supervision methods are both relevant and necessary. Ukrainian psychologists have consolidated their efforts, not only in working with victims of the war but also in collaborating on strategies for coping, recreation, and psychological and professional recovery.

The authors of this article drew on established evidence regarding mindfulness practices. These practices enhance the density of grey matter and improve self-regulation. In contrast, spiritual (meditative) practices reduce activity in the amygdala (Hölzel et al., 2011).

Table 2. An algorithm for neuropedagogical optimization of supervision for Ukrainian psychologists to reduce stress-inducing influences while working with war trauma

Stage	Goals and objectives	Methods and approaches	Expected results
1. Diagnostic analysis	Assessing professional burnout, stress, and psychological resources of psychologists	• Neuropsychological testing (Maslach Burnout Inventory – MBI) • Heart rate variability (HRV) analysis to measure stress levels • Surveys using the "mirror groups" method	Development of individual stress and burnout profiles, enabling tailored supervision to meet psychologists' specific needs
2. Interactive reflection and adaptation of the supervision model	Evaluating the effectiveness of methods and adjusting supervision strategies accordingly	• Reflective practice model • Integration of gamified elements to reduce cognitive load • Organizing "support cafés" for informal experience sharing	Enhanced professional competence of psychologists, reduced risk of burnout
3. Long-term integration of neuropedagogical practices	Strengthening results and expanding the supervision model within the educational system	• Using digital platforms for online supervision • Creating educational resource centers for psychologist support • Incorporating neuropedagogical supervision programmes into professional development courses (based on Order No. 560)	Establishment of a sustainable support system for psychologists, leading to long-term stress reduction and improved effectiveness of psychological support during wartime

Source: The authors' own conception

One might hope that the ongoing pilot implementation of the remote neuropedagogical supervision model will demonstrate its potential. It aims to support psychologists working with war trauma and to reduce the risk of professional burnout.

Discussion

Discussing the proposed model, one should recognize that its implementation requires an adaptive, modular, and self-regulated approach. This is especially true given the fragmented work of psychologists, limited time, and the reliance on Zoom communication. The approach is based on the principles of asynchronous learning (Anderson, 2008), socio-emotional constructivism (Vygotsky, 1930), and technology-mediated supervision (Martin et al., 2017).

First, it is necessary to create a digital platform or group. Short thematic meetings with experts (30-40 minutes) are alternated with small interactive groups (5-6 people) in breakout rooms. In these groups, the "mirror groups" method (Yalom, 2017) and cognitive-behavioral reframing techniques (Beck, 2021) are applied. A key element is integrating neuropedagogical practices through micro-sessions of body-orientatedself-regulation (Levine & Frederick, 1997). These are incorporated directly into the online interaction process, helping reduce tension in real time. To ensure long-term effects, one can use a digitally based supervision diary. It creates a flexible neuropedagogical support system that is essential in wartime conditions.

Meanwhile, the hardware components could be enhanced in the future. Neurobiological biofeedback tools based on artificial intelligence, such as virtual reality and biofeedback, could be integrated into neuropedagogical supervision models for psychologists.

In concluding the discussion of the developed model, it would be valuable to compare the results with supervision models from other conflict zones, such Palestine. Unlike the pragmatically orientated cooperative supervision model in Gaza, which focuses on procedural resource allocation, vertical communication, and crisis functionality (Shehada & Imron, 2025), the Ukrainian model develops a multilevel neuropedagogical framework.

Besides, supervision in the Ukrainian context transforms into a cognitive-emotional environment of resonant presence. Here, mindfulness and mirroring practices become not only techniques but also ontological tools of professional existence.

Within the Israeli-Palestinian conflict context, as shown by Baum (2013), supervision takes on an intercultural dimension. The Ukrainian model,

by contrast, integrates sociocultural trauma into the heart of supervisory dialogue. It addresses this trauma through the "soft body" of mindfulness practices, gamified interaction, and stress visualization via digital tools. Whereas Baum's model (2013) shows a tendency to hierarchize experience, the Ukrainian approach aims to decolonize supervision as an act of co-existence. Here, the professional is not only vulnerable but also an empowered agent of collective recovery.

Despite the practical importance of this article, its international relevance is limited by its focus on Ukrainian realities. These include full-scale war, internal displacement, legal initiatives by the Ministry of Education and Science of Ukraine, and a supervision model not yet sufficiently validated abroad. This makes it difficult to transfer the findings directly to other educational frameworks without major alterations.

Regardless, the article plays a significant role in the discourse on international education. It proposes an innovative supervision approach: a neuropedagogical model that integrates mindfulness, sensory practices, metacognition, and digital platforms to support psychologists. This experience may prove invaluable for countries seeking new methods to train and maintain professional resilience in crises. Humanitarian disasters, pandemics, and armed conflicts are examples of these situations.

Conclusion

The article confirms that supervision is a crucial tool for supporting psychologists working under chronic stress, particularly in the context of war. Stress factors lead to cognitive and emotional exhaustion, reduced professional competence, and an increased risk of burnout.

At this point, one can observe the favorable effects of the remote supervision process. It can decrease the cognitive burden by providing instant feedback, effective pedagogical strategies, and support for limbic system regulation. Furthermore, the study highlights the effectiveness achieved through the integration of neuroscientific perspectives within supervision.

Neuroscience has shown that chronic stress and burnout cause structural and functional changes. At the same time, neuropedagogical methods aimed at restoring the nervous system's functional state, such as sensory regulation, cognitive-behavioral approaches, and body-orientated practices, boost stress resilience. They also preserve reflective skills and improve supervision efficiency in combat stress conditions.

Additionally, neuroplastic techniques help restore cognitive functions and reduce the risk of burnout. Preliminary results suggest the approach is

effective, as it stabilises psychologists' emotional states, enhances professional reflection, and reduces chronic stress impact.

Thus, applying neuropedagogical principles to supervision enhances specialists' adaptive capacity and minimizes the negative effects of prolonged professional stress. This, in turn, improves their professional effectiveness.

Research prospects

Real results should become evident after longitudinal experimental studies. At present, to minimize stress and prevent emotional burnout, it is recommended to implement neuropedagogical online strategies in supervision. These strategies should focus on supporting neuroplasticity and strengthening resilience. Additionally, their effectiveness should be tested whenever possible.

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